

CLAIMS

What is claimed is:

1. A fluid supply valve to supply a fluid stream, comprising:
a first valve element having a first port formed therethrough;
a second valve element rotatably fixed to said first valve element
and having a second port formed therethrough; and
a pressure balancer interposed and rotatably supported between
said first valve element and said second valve element, said pressure balancer
having a inlet passage and an outlet passage;
wherein said pressure balancer is rotatably positionable to a closed
position such that fluid communication from said first port to said inlet passage is
prohibited; and
wherein said pressure balancer is rotatably positionable in a range
of flow positions such that fluid communication is established in a flow path from
said first port through said inlet passage and said outlet passage to said outlet
port.
2. The fluid supply of claim 1, wherein said second port is tapered to
vary a fluid flow rate based on a rotational position of said pressure balancer
relative to said second valve element.

3. The fluid supply valve of claim 1, further comprising a sealing disc interposed between said first valve element and said pressure balancer, said sealing disc rotatably fixed to said first valve element and having an aperture alignable with said inlet passage of said pressure balancer based on rotation of said pressure balancer to enable fluid flow therethrough.

4. A fluid supply valve to supply a fluid stream at a range of temperatures, comprising:

a first valve element having a first inlet port and a second inlet port formed therethrough;

a second valve element rotatably fixed to said first valve element and having a first outlet port and a second outlet port formed therethrough; and

a pressure balancer interposed and rotatably supported between said first valve element and said second valve element, said pressure balancer having a first inlet passage, a first outlet passage, a second inlet passage and a second outlet passage;

wherein said pressure balancer is rotatably positionable to a closed position such that fluid communication from said first inlet port to said first inlet passage and said second inlet port to said second inlet passage is prohibited; and

wherein said pressure balancer is rotatably positionable in a range of flow positions such that fluid communication is established in at least one of a

first flow path from said first inlet port through said first inlet passage and said first outlet passage to said first outlet port and a second flow path from said second inlet port through said first inlet passage and said first outlet passage to said first outlet port.

5. The fluid supply valve of claim 4, wherein each of said first and second outlet ports formed in said second valve element comprise a tapered port to vary a fluid flow rate based on a rotational position of said pressure balancer relative to said second valve element.

6. The fluid supply valve of claim 4, wherein one of said range of positions includes a first flow position of said pressure balancer to establish said first flow path.

7. The fluid supply valve of claim 4, wherein one of said range of positions includes a second flow position of said pressure balancer to establish said second flow path.

8. The fluid supply valve of claim 4, wherein one of said range of positions includes a third flow position of said pressure balancer to establish said first flow path and said second flow path.

9. The fluid supply valve of claim 4, further comprising a sealing disc interposed between said first valve element and said pressure balancer, said sealing disc rotatably fixed to said first valve element and having first and second apertures alignable respectively with first and second inlet passages of said pressure balancer based on rotation of said pressure balancer to enable fluid flow therethrough.

10. The fluid supply valve of claim 4, wherein said pressure balancer is a diaphragm-type balancer.

11. A fluid supply device that supplies a fluid stream at a range of temperatures, comprising:

- a casing having a first inlet, a second inlet and an outlet;

- a fluid supply valve disposed within said casing including:

- a valve housing having a first inlet port in fluid communication with said first inlet and a second inlet port in fluid communication with said second inlet;

- a pressure balancer rotatably supported within said valve housing, said pressure balancer having a first inlet passage, a first outlet passage, a second inlet passage and a second outlet passage;

a valve element rotatably fixed to said valve housing adjacent said first and second outlet passages, said valve element having a first outlet port and a second outlet port formed therethrough; and

a bonnet attached to said casing enclosing said fluid supply valve within said casing;

wherein said pressure balancer is rotatably positionable to a closed position such that fluid communication from said first inlet port to said first inlet passage and said second inlet port to said second inlet passage is prohibited; and

wherein said pressure balancer is rotatably positionable in a range of flow positions such that fluid communication is established in at least one of a first flow path from said first inlet port through said first inlet passage and said first outlet passage to said first outlet port and a second flow path from said second inlet port through said first inlet passage and said first outlet passage to said first outlet port.

12. The fluid supply device of claim 11, wherein each of said first and second outlet ports formed in said valve element comprise a tapered port to vary a fluid flow rate based on a rotational position of said pressure balancer to said valve element.

13. The fluid supply device of claim 11, wherein one of said range of positions includes a first flow position of said pressure balancer to establish said first flow path.

14. The fluid supply device of claim 11, wherein one of said range of positions includes a hot flow position of said pressure balancer to establish said second flow path.

15. The fluid supply device of claim 11, wherein one of said range of positions includes a third flow position of said pressure balancer to establish said first flow path and said second flow path.

16. The fluid supply device of claim 11, further comprising a sealing disc interposed between said valve housing and said pressure balancer, said sealing disc rotatably fixed within said valve housing and having first and second mixing apertures alignable respectively with first and second inlet passages of said pressure balancer based on rotation of said pressure balancer to enable fluid flow therethrough.

17. The fluid supply device of claim 11, wherein said pressure balancer is a diaphragm-type balancer.

18. The fluid supply device of claim 11 further comprising a stem extending from said pressure balancer through said valve element for selectively rotating said pressure balancer between said closed position and said range of flow positions.